Product Carbon Footprint for tktdhlinhw

Total Cradle-to-Gate PCF

17.176 kgCO2e

Product Quantity

1.0 unit

System Boundary

Factory Gate (Extended to Use Phase)

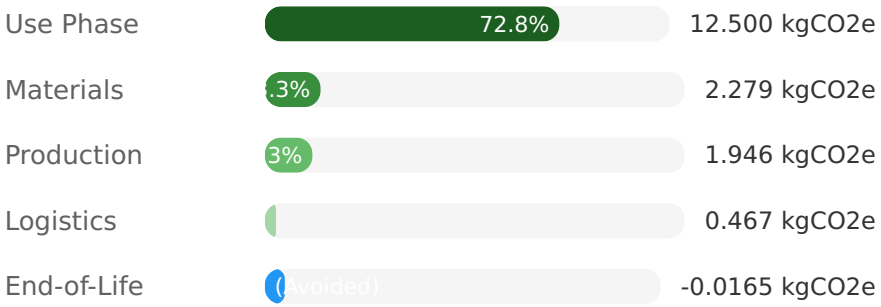
Primary Emission Scope

Scope 3 (Use Phase)

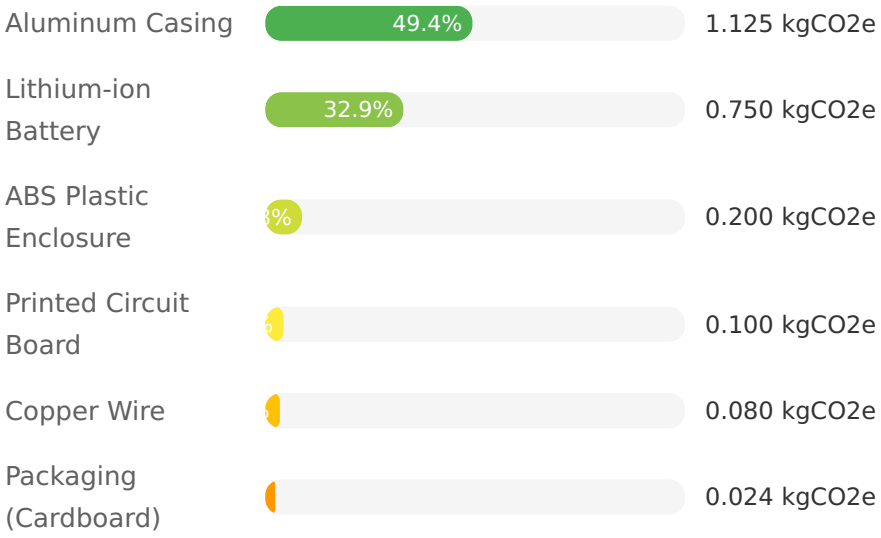
Top Material Hotspot

Aluminum Casing (49.4% of materials)

Lifecycle Stage Breakdown



Material Carbon Impact Breakdown



Highlights & Emission Hotspots

- The **Use Phase (Scope 3, Category 11)** is the dominant emission source, contributing nearly 73% of the total product carbon footprint, primarily due to the product's energy consumption over its 5-year lifespan.
- **Material Production (Scope 3, Category 1)** accounts for a significant 13.3% of emissions, with Aluminum Casing and Lithium-ion Battery being the primary contributors within this category.
- **Purchased Energy (Scope 2)** for manufacturing in China constitutes over 11% of the PCF, highlighting opportunities for further renewable energy integration or manufacturing efficiency improvements.

Recommended Action Plan for Reduction

- **Optimize Use Phase Energy Efficiency:** Focus on reducing the product's energy consumption during its active lifespan through design improvements, low-power components, and user education on sustainable use.
- **Source Lower-Carbon Materials:** Investigate alternative materials for high-impact components like aluminum and lithium-ion batteries. Prioritize suppliers using recycled content or manufacturing with renewable energy.
- **Enhance Manufacturing Energy Mix:** Increase the percentage of renewable energy used in the production facility in China beyond the current 30% to significantly reduce Scope 2 emissions.
- **Strengthen Circularity Initiatives:** Leverage the existing 70% recyclability and take-back programs, and explore design for disassembly to maximize material recovery and further reduce End-of-Life emissions.